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On APRIL 7, 2004

TOWNSEND and TOWNSEND and CREW LLP

By: Nancy Pizzo  
Nancy Pizzo

PATENT

018563-004300US

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of:

AMIR ABOLFATHI et al.

Application No.: 09/534,461

Filed: March 24, 2000

For: HEALTH-CARE E-COMMERCE  
SYSTEMS AND METHODS

Examiner: VANEL FRENEL

Art Unit: 3626

**REPLY BRIEF  
UNDER 37 C.F.R. § 1.193**

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Sir:

Appellants offer this Reply Brief in response to the Examiner's Answer mailed on March 22, 2004. This Brief is submitted in triplicate. Appellants do not believe any fee is required in filing this Reply Brief, however, should a fee be due, the Commissioner is authorized to deduct fees from Deposit Account No. 20-1430.

The following remarks are intended to further focus the issues in this appeal. Appendix A, attached hereto, contains a copy of all claims pending in this case.

1. Andreiko et al.

Appellant's Brief noted that neither the Joao nor Andreiko et al. references teach or suggest all the claim limitations of claim 1. Specifically, they fail to teach a network wherein one or more treating professionals receive and manipulate 3-D computer models of one or more of a patient's teeth, and a server performing patient data visualization in response to a user request (Appellant's Brief, p. 4). The Examiner's Answer cites numerous sections of text in Andreiko et al. as allegedly teaching the above limitations (Examiner's Answer, pp. 15-16). Appellants respectfully disagree with the Examiner's characterization of both the Andreiko et al. reference, and the limitations of claim 1.

First, the Examiner mischaracterizes Andreiko et al. as suggesting or teaching 3-D computer models of a patient's teeth that are manipulable by the treating professional. The Examiner submits that the following "data input procedures," which are performed by an orthodontist and transmitted to a remote appliance facility, allegedly suggest or teach manipulating 3-D computer models of a patient's teeth:

defining tooth and jaw positions and profiles in terms of orthodontic parameters and landmarks (Andreiko; col. 21, line 66 to col. 22, line 5); making changes in the mandibular bone and skeletal changes in the maxilla (Andreiko; col. 22, lines 37-43); making modifications or surface displacements on some teeth to pick up the highest cusp or marginal ridge (Andreiko; col. 23, line 25 to col. 24, line 3).

The above-cited text of Andreiko et al. simply describes "data input" of various "parameters and landmarks that can be later analyzed by computer to best implement the orthodontic knowledge, skill and experience embodied in the prescription 27 . . ." (Andreiko et al., col. 22, lines 1-3). The model of the teeth itself is never changed nor manipulated, but rather is sent along with the physician's parameters that are input as the "prescription 27" and other "information 17" to the appliance system manufacturer, where all of the information is used in an analysis to produce custom appliances. (Andreiko et al., col. 22, lines 18-20). Thus, the text cited by the Examiner, "making changes in the mandibular bone and skeletal changes in the maxilla" and "making modifications or surface displacements on some teeth to pick up the highest cusp or marginal ridge," are not examples of modifications to the computer model by the treating physician, but rather desired adjustments to the patient's teeth that are input by the

treating professional separate from or with reference to the unchanged computer model of the teeth.

Second, Appellants disagree with the Examiner's characterization of claim 1. Page 15 of the Examiner's Response asserts that the third element of claim 1 "does not absolutely require any manipulation of a computer model of a patient teeth, but rather at least one 'treating professional' coupled to the network with the intent or purpose of receiving and manipulating a computer model." The third element of claim 1 recites "one or more treating professionals coupled to the network to receive and manipulate the computer model of the patient's teeth." Appellants were unable to find the words "intent" or "purpose," expressly nor impliedly, anywhere in the present application. Appellants also note the first element of claim 1 recites "a network to communicate information comprising manipulable three-dimensional (3D) computer models of a patient's teeth." Even if "intent" or "purpose" were somehow implied in the claims, the models of teeth disclosed in Andreiko et al. are still not manipulable by a treating physician, as explained above.

On page 16 of the Examiner's Response, the Examiner further asserts that "mere conversion of data to computer readable form is in and of itself a manipulation of a 3D profile (see col. 39, lines 1-15)." To provide rationale for this assertion, the Examiner reasons that "such terms were given their broadest reasonable interpretation." (Examiner's Answer, page 17). However, the Examiner's interpretation of the phrase "manipulation of a 3D model" to encompass "conversion of data to computer readable form" is not reasonable. Claim 1 does not recite manipulation of the broad term "data," but rather manipulation of a 3D model. Contrary to the Examiner's assertion on page 16 of the Examiner's Answer, the bodies of pending claims 16-19 do further refine "manipulation of a 3D model." For example, claim 18 recites "wherein allowing a treating professional to manipulate the three-dimensional computer model of the teeth using the browser further comprises clicking on a tooth to adjust its position." Thus, the 3D model itself is manipulated by the treating physician, not the data that it may comprise of.

Third, the Examiner mischaracterizes Andreiko et al. as suggesting or teaching a server performing patient data visualization in response to a user request. As explained on page 6 of

Appellant's Brief, the word "server" does not exist in Andreiko et al. To overcome this deficiency, the Examiner asserts that transmission by modem of information from the orthodontist's office to the appliance facility teaches use of a server because one of the computers must function as a server in that "it handles the administrative control of all or part of the interconnected computers." (Examiner's Answer, page 17). However, the Examiner provides no reference to where "administrative control" of one computer by another is effected in the Andreiko et al. reference. Furthermore, even if Andreiko et al. were to teach a server, it certainly does not disclose a server performing patient data visualization in response to a user request, as recited in claim 1.

Appellant's Brief also noted that neither of the Joao or Andreiko et al. references teach or suggest all the claim limitations of claim 11, specifically the steps of allowing a treating professional to manipulate the three-dimensional computer model of the teeth using the browser (Appellant's Brief, p. 6). The Examiner's Answer asserts that col. 15, lines 22-67 allegedly teach "the use of an input computer (30) and a mouse (47a) and/or digitizer board (47) to manipulate the three-dimensional model." (Examiner's Answer, p. 18). However, a 3-D model of the teeth is not even mentioned in the cited text, nonetheless one that is manipulable by a treating professional. In contrast, the cited text discloses two or more two dimensional images of the patient's mouth, which, when used together, produce "stereo images capable of being resolved in three dimensions." (Andreiko et al., Col. 15, lines 22-29) As such, the Examiner has failed to show a teaching or suggestion of all the elements of claim 11 in the Andreiko et al. reference.

Finally, Appellant's Brief also noted that neither of the Joao or Andreiko et al. references teach or suggest all the claim limitations of claim 21, specifically a data storage device coupled to the processor and adapted to store data including manipulable 3D dental model for each patient; and software to communicate 3D patient data in response to a client request. In his Reply, the Examiner asserts that "the above limitations, in and among themselves, do not absolutely require any manipulating of a 3D dental model, but rather a device for storing such data and communicating it." (Examiner's Answer, p. 20). As explained above for claim 1, Andreiko et al. does not disclose a manipulable 3D model, but rather a model of the patient's

teeth that is sent along with information input by a treating professional as to the desired outcome of the patient's teeth. Therefore, Andreiko et al cannot teach of a data storage device adapted to store manipulable 3D dental models for each patient. Furthermore, Andreiko et al is void of teaching or suggesting software to communicate 3D patient data in response to a client request. Therefore, all the elements of claim 21 cannot be found in the Andreiko et al. reference.

2. Joao

In response to Appellants' observation that a "server" is not disclosed in Andreiko, the Examiner emphasizes that Joao was relied upon to address that limitation rather than Andreiko et al. Claim 1 recites, among other elements, a server storing data for each patient including 3D computer models of teeth and performing patient data visualization in response to a user request. The Examiner submits that col. 14, lines 49-67 of Joao discloses "a server." (Examiner's Answer, page 17). However, a generic "server" is not what is recited in claim 1, but rather a server storing 3D computer models of teeth and performing patient data visualization in response to a user request. The Examiner's Reply has failed to show any support for the above claim limitation in the Joao reference, and therefore has not established a *prima facie* case of obviousness under §103.

3. Combination of Andreiko et al. and Joao

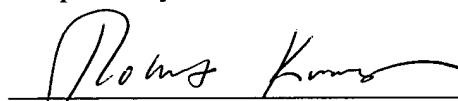
There continues to be no adequate motivation to combine the teachings of Andreiko et al, directed at an apparatus for automatically designing and manufacturing custom orthodontic appliances, with Joao, directed at apparatus and methods for providing healthcare information. The Court of Appeals for the Federal Circuit has repeatedly emphasized the need to apply the requirement that there be a motivation to combine references rigorously, cautioning that such rigor is "the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis." *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Circ. 1999). "The need for specificity pervades this authority." *In re Lee*, 61 USPQ2d 1430, 1433 (Fed Cir. 2002). The

proffered reasoning includes only some examples of advantages that are identified with the references individually and not in combination (Examiner's Answer, pp. 4-5), and a lengthy recital of law (Examiner's Answer, pp. 22-24). In this instance, the Examiner appears to be engaging in exactly the impermissible hindsight analysis that the rigorous nature of the requirements is intended to prevent. No specific source for the motivation is provided. The mere fact that the references individually disclose certain advantages does nothing to "explain the reasons one of ordinary skill in the art would have been motivated *to select the references and to combine them* to render the claimed invention obvious." *In re Rouffet*, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998, emphasis added).

Conclusion

In view of the foregoing, Applicants believe that all claims now pending in this application are in condition for allowance. Reversal and remand to the Examiner with instructions to issue a formal Notice of Allowance at an early date are respectfully requested.

Respectfully submitted,



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**APPENDIX A**  
**Complete Set of Pending Claims**

1. (Amended) A virtual health-care electronic commerce community, comprising:
  - a network to communicate information comprising manipulable three-dimensional (3D) computer models of a patient's teeth relating to the community;
  - one or more patients coupled to the network;
  - one or more treating professionals coupled to the network to receive and manipulate the computer model of the patient's teeth; and
  - a server coupled to the network, the server storing data for each patient including 3D computer models of teeth and performing patient data visualization in response to a user request.
2. (As filed) The community of claim 1, wherein the treating professional views one or more of the following patient data visualization over the network: a right buccal view; a left buccal view; a posterior view; an anterior view; a mandibular occlusal view; a maxillary occlusal view; an overjet view; a left distal molar view; a left lingual view; a lingual incisor view; a right lingual view; a right distal molar view; an upper jaw view; and a lower jaw view.
3. (As filed) The community of claim 1, wherein the treating professionals include dentists or orthodontists.
4. (As filed) The community of claim 1, further comprising one or more partners coupled to the network.
5. (As filed) The community of claim 4, wherein the partners include a financing partner.

6. (As filed) The community of claim 4, wherein the partners include a supplier.

7. (As filed) The community of claim 4, wherein the partners include a delivery company.

8. (As filed) The community of claim 1, wherein the treating professionals perform office management operations using the server.

9. (As filed) The community of claim 8, wherein the office management operations include one or more of the following: patient scheduling, patient accounting, and claim processing.

10. (As filed) The community of claim 1, wherein the patients and the treating professionals access the server using browsers.

11. (As filed) A computer-implemented method for performing dental-related electronic commerce, comprising:

transmitting teeth data associated a patient from a dental server to a treating professional computer over the Internet upon an authorized request;

displaying a three-dimensional computer model of the teeth at the treating professional computer using a browser;

allowing a treating professional to manipulate the three-dimensional computer model of the teeth using the browser;

transmitting the computer model from the treating professional computer to the server; and

generating an appliance to treat the patient based on the computer model of the teeth.

12. (As filed) The method of claim 11, further comprising providing financing options for the patient using one or more financing partners.



13.    [[14.]] (As filed) The method of claim 11, further comprising offering an on-line shop geared to the patient's dental requirements.

14.    [[15.]] (As filed) The method of claim 11, further comprising providing office management utilities for the treating professional.

15.    [[16.]] (As filed) The method of claim 14, wherein the office management utilities include one or more of the following: patient scheduling, patient accounting, and claim processing.

16.    [[17.]] (As filed) The method of claim 11, wherein allowing a treating professional to manipulate the three-dimensional computer model of the teeth using the browser further comprises displaying a plurality of dental views.

17.    (As filed) The method of claim 16, wherein the dental views include one or more of the following: a right buccal view; a left buccal view; a posterior view; an anterior view; a mandibular occlusal view; a maxillary occlusal view; an overjet view; a left distal molar view; a left lingual view; a lingual incisor view; a right lingual view; a right distal molar view; an upper jaw view; and a lower jaw view.

18.    (As filed) The method of claim 11, wherein allowing a treating professional to manipulate the three-dimensional computer model of the teeth using the browser further comprises clicking on a tooth to adjust its position.

19.    (As filed) The method of claim 18, further comprising displaying x, y and z axis to allow the treating professional to adjust the position of the tooth.

20.    (As filed) The method of claim 11, further comprising providing supplemental services to the patient, including teeth whitening services.

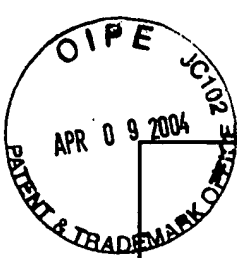
21.    (Amended) A server to support a health-care electronic commerce community with one or more patients and one or more service providers, comprising:  
a processor adapted to communicate with a network;

a data storage device coupled to the processor and adapted to store data including manipulable 3D dental model for each patient; and  
software to communicate 3D patient data in response to a client request.

22. (As filed) The server of claim 21, further comprising a browser adapted to receive the client request and transmitting the request to the server.

23. (As filed) The server of claim 22, wherein the browser further comprises a viewer plug-in to visualize patient data in 3D.

24. (As filed) The server of claim 21, wherein the providers service one or more of the following health-care applications: dentistry applications, cosmetic augmentation, hair-care enhancements, liposuction, plastic or reconstructive surgery.



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		Art Unit	3626
		Examiner Name	Frenel, Vanel
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